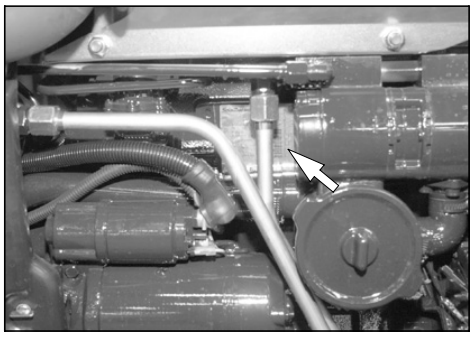
Operator’s manual

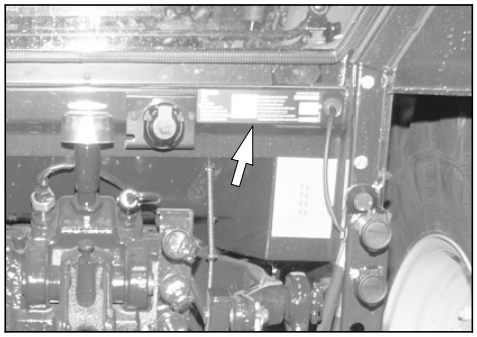
A75n, A85n, A95n

A75L, A85L, A95L

Serial numbers of your tractor

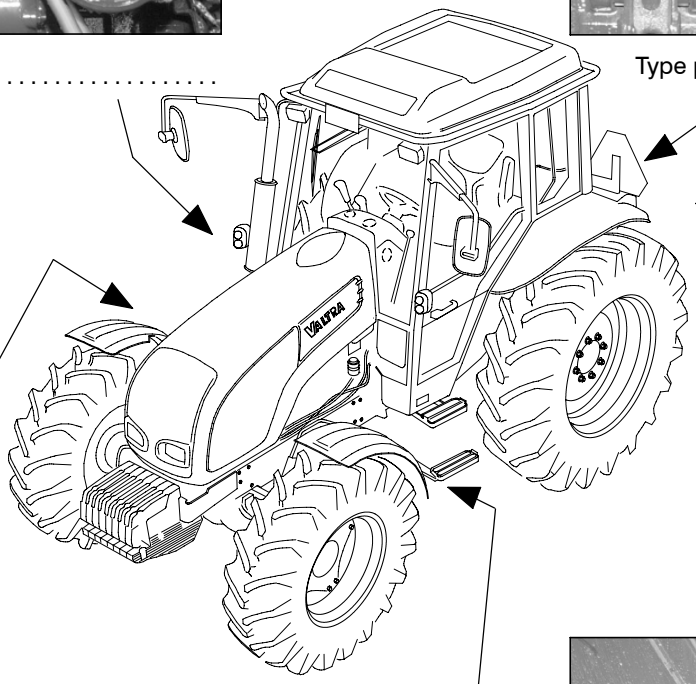


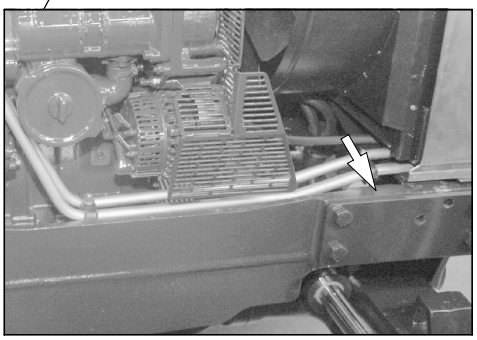
In open cab models the serial numbers are on the same locations



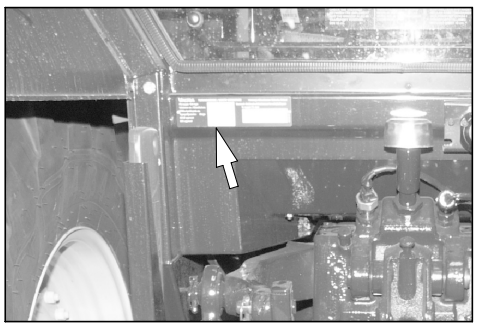
Engine number . . . . . .

Type plate EEC . . . . . .

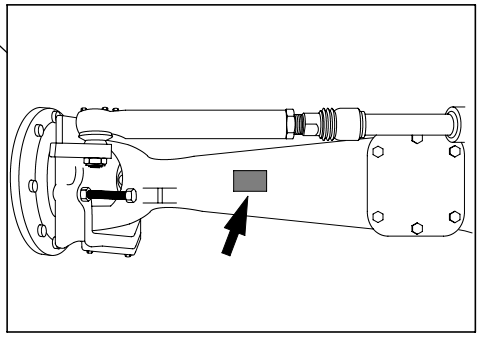




Tractor number . . . . . .



Cab number . . . . . .



Powered front axle number . . . . . .

A 1

Main table of contents

The Operator's Manual is divided into **12 main parts**, using the letters **A, B, C ... L**. These are further sub divided into **number** sections. There are **four levels** of titles. E.g. on the marking **D.1.3** the letter D tells that it is the main part **D**, **Instruments and controls**. The first number **1** (see detailed table of contents) tells that it is the **illustration section of the instruments and controls part,** etc.
The detailed table of contents provides a lettering, a numbering and page system. The bottom of each page displays a reference to the main part of the manual it is in.

page no

A Table of contents ..... 4 – 5

B Safety precautions ..... 6 – 9

C General description ..... 10 – 18

D Instruments and controls ..... 19 – 47

E Starting and running ..... 48 – 51

F Operating instructions ..... 52 – 62

G Maintenance schedule ..... 63 – 68

H Periodic maintenance ..... 69 – 87

I Checks and adjustments ..... 88 – 99

J Specifications ..... 100 – 111

K Extra equipment ..... 112 – 133

L Alphabetical index ..... 134 – 136

To the operator

Valtra A75n, A75L, A85n, A85L, A95n, A95L,
(models sold may vary in different marketing areas)

This Operator's Manual is primarily intended for the driver. The manual contains detailed instructions for driving and maintaining the tractor. Make sure that your new tractor is always handled and maintained in the correct way which will keep it reliable and provide economical operation for many years. In certain marketing areas the whole model range are not sold.
This Operator's Manual is only for agricultural tractors. If the tractor is used as a traffic tractor, it must fulfil the requirements of local traffic regulations. In this case always contact your Valtra dealer first.

In this booklet, information which refers to more than one model is given as (e.g. A75n-A95n =A75n, A85n, A95n and A75L-A95L =A75L, A85L, A95L). n letter means cab models and L letter open cab models.
Alternative equipment in the book means equipment, which can be selected when buying. This equipment can not easily be fitted at a later time to the tractor. Extra equipment means the equipment, which can be bought and mounted at a later time to the tractor.

We recommend that you read the manual thoroughly. Follow the maintenance program carefully and add the daily maintenance to your normal routine.

Maintenance, repairs and adjustments which are not described in this Operator's Manual require the use of special tools and exact technical data. For such work you should contact your dealer who has specially trained personnel to help you.

Only use genuine Valtra spare parts for optimum performance from your tractor. You should order spare parts according to the instructions given in the illustrated parts catalogue.

Due to the continual development of Valtra Inc. products, the content of this manual may not always correspond with the new product. Therefore, we retain the right to make alterations without prior notification.

Please note: when using the tractor you must always *follow all valid laws and regulations* even, if they have not specifically been pointed out in this manual.

Valtra Inc.

A. Detailed table of contents

Serial numbers of your tractor **1**
Main table of contents **2**
To the operator **3**
A. Detailed table of contents **4**
B. Safety precautions **6**
B 1. Safety rules 6
B 1.1. Roll Over Protective Structures 9
C. General description **10**
C 1. Illustrations Valtra A75n – A95n, A75L – A95L . . . 10
C 2. Service 15
C 3. Engine 15
C 4. Power transmission 15
C 4.1. Clutch 15
C 4.2. Gearbox 16
C 4.3. Rear axle 16
C 4.4. Power shuttle 16
C 4.5. Powered front axle 16
C 4.6. Power take – off 17
C 5. Brake system 17
C 6. Steering system 17
C 7. Hydraulic system 18
C 7.1. Hydraulic lifts 18
C 7.2. Valves for auxiliary hydraulics 18
D. Instruments and controls **19**
D 1. Illustrations 19
D 1.1. Controls on front 19
D 1.2. Instrument panel 20
D 1.3. Controls on right hand side 21
D 1.4. Controls on left hand side 22
D 1.5. Rear side controls 23
D 1.6. Roof console 23
D 1.7. Driver's seat 24
D 1.8. Other controls 25
D 2. Instruments and controls, more detail 25
D 2.1. Controls on frontside 25
D 2.2. Instrument panel 27
D 2.2.1. Front panel of instrument panel 27
D 2.2.2. Instrument panel 28
D 2.2.2.8. Agroline – instrument panel (alternative), LCD – display unit 29
1. Continuously shows a display that cannot be chosen with a switch 30
2. Displays chosen with change over switch . . 30
3. Setting mode 31
Changing the Agroline tyre/tire parameters for different tyres/tires 32
4. Change over switch for LCD – display unit in Agroline instrument panel 33
D 2.2.3. Side panel of instrument panel 33
D 2.3. Controls on right hand side 34
D 2.3.1. Driving 34
D 2.3.1.4. HiShift 34
D 2.3.2. Rear linkage (electrohydraulically controlled lift) 37
D 2.3.3. Rear linkage (mechanically controlled hydraulic lift) 39
D 2.3.4. Rear power take – off 40
D 2.3.5. Auxiliary hydraulic 40
D 2.3.6. Other controls 41
D 2.4. Controls on left hand side 43
D 2.5. Controls on rear side 44
D 2.6. Roof console 44
D 2.7. Seat 46
D 2.7.1. Cab models 46
E. Starting and running **48**
E 1. Points to note during the first 50 hours running . 48
E 2. Start 48
E 2.1. Normal start/cold start 48
E 2.1.1. Cold start, special instructions 48
E 2.2. Starting aerosol 49
E 2.3. Starting with auxiliary batteries 49
E 3. Driving 49
E 3.1. Changing gear 49
E 3.2. Differential lock 50
E 3.3. Powered front axle 50
E 4. Stopping 50
E 5. Action to be taken during using 51
E 5.1. Permitted driving inclinations for a tractor on a slope 51
E 5.2. Use of snow chains 51
E 5.3. Front mudguards 51
E 5.4. Towing the tractor 51
E 5.5. Fold down Rops 51
F. Operating instructions **52**
F 1. Use of power take – off 52
F 2. Trailer 53
F 3. Three – point linkage 54
F 3.1. Lifting links 54
F 3.2. Check links 54
F 3.3. Telescopic lower links 55
F 3.4. Quick couplings for lower links, extra equipment 55
F 4. Using the hydraulic lift 56
F 4.1. Using the mechanically controlled hydraulic lift 56
F 4.1.1. Position lever 56
F 4.1.2. The floating position 56
F 4.1.3. Draft control and automatic weight transmission 57
F 4.1.4. Adjustment of lowering speed 57
F 4.2.1. Lift/stop/lower switch (Autocontrol switch) 58
F 4.2.2. Activating the linkage 58
F 4.2.3. Position control 58
F 4.2.4. Setting transport height 58
F 4.2.5. Floating position 59
F 4.2.6. Draft control 59
F 4.2.7. Lowering speed control 59
F 4.2.8. Passing switch for position control knob = forced lowering switch 59
F 4.2.9. Drive balance control switch 59
F 5. Operation of auxiliary hydraulics 60
F 5.1. Valves adjusting for single – or double acting 60
F 5.2. Action to be taken during operation 61
F 5.3. Hydraulic motor 61
F 6. Attaching implements 61
F 6.1. Using PTO shafts 61
F 7. Use of top link 62
G. Maintenance schedule **63**
G 1. Service 63
G 2. Recommended fuel and lubricants 64
G 2.1. Oil recommendations according to outdoor temperature 64
G 2.2. Quality requirements of engine fuel 65
G 2.2.1. Fuel 65
G 2.2.2. Fuel storage 65
G 2.2.3. Filter system 65
G 2.2.4. Biodiesel fuel 65
G 3. Grease 66
G 4. Maintenance schedule 66
H. Periodic maintenance **69**
H 1. General 69
H 1.1. Air filters 69
H 2. Maintenance daily at least every 10 hours 70
H 3. Maintenance weekly at least every 50 hours . . . 71
H 4. Maintenance every 500 hours 75
H 5. Maintenance every 1000 hours or yearly 80
H 6. Maintenance every 2000 hours or every other year 85
I. Checks and Adjustments **88**
I 1. Engine 88
I 1.1. Bleeding fuel system 88

I 1.2. Air cleaner 88
I 1.3. Maintenance – cooling system 89
I 2. Electrical system 90
I 2.1. Checking and maintenance of battery 90
I 2.2. Alternator 90
I 2.3. Safety precautions for the electrical system .. 90
I 2.4. Fuses 91
I 2.5. Current sockets 92
I 2.6. Headlight adjustment 92
I 3. Power transmission 93
I 3.1. Adjusting pedal free travel of propulsion clutch 93
I 3.2. Adjusting PTO clutch lever free travel 93
I 4. Brake system 94
I 4.1. Adjusting travel of brake pedals 94
I 4.2. Adjusting parking brake 94
I 4.3. Bleeding brake system of air 94
I 5. Steering system 95
I 5.1. Checking and adjusting toe – in of front wheels 95
I 5.1.1. Adjusting toe – in 2WD 95
I 5.1.2. Adjusting toe – in 4WD 96
I 5.2. Limiting steering lock of front wheels (powered front axle) 96
I 6. Adjusting track width 96
I 6.1. Front axle 96
I 6.1.1. 2WD axle 97
I 6.1.2. Powered front axle 97
I 6.2. Adjusting track width: Rear axle 98
I 7. If the tractor is not used 99
I 7.1. Storing the tractor 99
I 7.2. Removing the tractor from storage 99
J. Specifications 100
J 1. Dimensions and weights 100
J 2. Max permissible axle loadings 100
J 3. Tyres 101
J 3.1. Tightening torques, wheel nuts 101
J 3.2. Tyre pressures and permissible loadings 102
J 4. Track widths, mm 103
J 5. Engine 104
J 5.1. Lubrication system (engine) 104
J 5.2. Fuel system and air filter 104
J 5.3. Coolant system 104
J 6. Electrical system 105
J 7. Power transmission 105
J 7.1. Clutch 105
J 7.2. Gearbox 105
J 7.3. Speed ranges (km/h) 106
J 7.4. Power take – off 106
J 7.4.1. Running speed at different nominal revs of the rear PTO (km/h) 107
J 7.4.2. Power take – off output 108
J 7.5. Powered front axle 108
J 7.6. 2WD axle 108
J 8. Brakes 109
J 9. Steering system 109
J 9.1. Turning radius 109
J 10. Working hydraulics 109
J 10.1. Hydraulic lift, functions 109
J 10.1.1. Max. lifting force 109
J 10.1.2. On mechanically controlled hydraulic lift 110
J 10.1.3. On electrohydraulically controlled hydraulic lift 110
J 10.1.4. Valves for auxiliary hydraulics 110
J 11. Other specifications 110
J 11.1. The capacity of the cab filter 110
J 11.2. Code number table for calibrating 111
K. Extra equipment 112
K 1. Extra equipment catalogue 112
K 1.1. Engine 112
K 1.2. Electrical system 112
K 1.3. Power transmission 112
K 1.4. Brake system 112
K 1.5. Steering system 112
K 1.6. Frame and wheel 112
K 1.7. Cab and shields 112
K 1.8. Hydraulic 113
K 2. Extra equipment, operating and service 114
K 2.1. Engine 114
K 2.2. Electrical system 114
K 2.2.1.Safety Stop 114
K 2.2.2. Electric main circuit switch 114
K 2.3. Power transmission 115
K 2.3.1. Front power take – off 115
1. Instructions for operating 115
2. Construction 115
3. Maintenance 115
4. Specifications 116
K 2.3.2. HiShift for the rear PTO switch 117
1. Instructions for operating 117
2. Adjustment for the slow engagement 118
K 2.4. Brake system 119
K 2.4.1. Trailer air pressure brakes (press air compressor) 119
1. The construction of the air pressure brakes . 119
2. Instructions for operating 119
3. Changing and bleeding the brake fluid 120
4. Service 120
K 2.4.2. Fluid brake valve of the trailer 121
1. The construction of the trailer brake valve: .. 121
2. Instructions for operating 121
3. Changing and bleeding of the brake fluid .. 122
4. Specifications 122
K 2.5. Steering system 122
K 2.6. Frame and wheel 122
K 2.7. Cab and shields 123
K 2.7.1. Air suspension – driver's seat 123
1. Seat functions 123
K 2.7.2. Air conditioning 124
1. Instructions for operating 124
2. Maintenance 125
K 2.8. Hydraulic and towing device 126
K 2.8.1. Trailer hitch 126
1. Instructions for operating 126
2. Checks and Adjustments 127
3. Specifications 128
K 2.8.2. Agricultural towing device 128
1. Specifications 129
K 2.8.3. Wagon towing device 129
1. General 129
2. Instructions for operating hitch 130
3. Maintenance and greasing 131
4. Specifications 132
K 2.8.4. Front linkage 132
1. Instructions for operating 132
2. Maintenance 133
3. Specifications 133
L. Alphabetical index 134
Conversion table for common units 137

B. Safety precautions

B 1. Safety rules

This section summarizes the regulations which must always be followed when working with the tractor. However, these regulations do not exempt the driver from following statutory and other national regulation as regards traffic safety and occupational health and safety.

Safety regulations applicable for different types of working sites and existing road traffic laws must always be followed.

When designing the tractor priority was given to the safety of the operator. Steps and handles have been placed with ease of entry into the cab in mind. The tractor has several safety features eg: guards for belts and pulleys etc.

1 **Danger, Warning, Caution** – Whenever you see the words and symbols shown below, used in this book and on decals, you MUST take note of their instructions as they relate to personal safety.

DANGER: This symbol together with the word DANGER indicates an imminently hazardous situation that, if not avoided, will result in DEATH OR VERY SERIOUS INJURY.

WARNING: This symbol together with the word WARNING indicates a potentially hazardous situation that if not avoided could result in DEATH or SERIOUS INJURY.

CAUTION: This symbol together with the word CAUTION is used to indicate a potentially hazardous situation that, if not avoided, may result in MINOR INJURY.

IMPORTANT: The word IMPORTANT is used to identify special instructions or procedures which, if not strictly observed, could result in damage to, or destruction of the machine, process or its surroundings.

NOTE: The word NOTE is used to indicate points of particular interest for more efficient and convenient repair or operation.

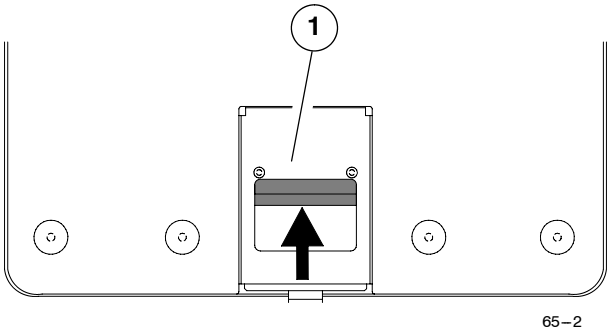
Decals

WARNING: DO NOT remove or obscure Danger, Warning, Caution or Instruction Decals. Replace any Danger, Warning, Caution or Instruction Decals that are not readable or are missing. Replacement decals are available from your Dealer in the event of loss or damage. The actual location of these Safety Decals is illustrated at the end of this section.

2 **Tractor construction** – The tractor construction must not be changed (f.ex. max. driving speed, max. power etc.)
The tractor is type approved to comply with construction and use regulations . Any changes to the tractor may reduce the safety and durability and affect the warranty terms.

3 **Brakes** – Always check that the brakes are operating correctly before setting off. The brake pedals should be locked together when driving on the road. The brakes should be adjusted as necessary. Extensive repairs to the braking system should be undertaken only by Valtra approved service personnel. **When implements or ballast weights are front end mounted the rear axle loading is decreased**:
– In these circumstances the driver should check that the rear brakes are still effective.
– When needed use opposite ballast weights at rear.

4 **Children and tractor** – Never allow children in the cab or near the tractor or attached implement while the engine is running. Always lower the implement to the ground when leaving the tractor.



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5 **Roof hatch** – Open the hatch by pulling the lever **1** on the handle rearwards. Then push at the front side of the roof hatch, the gas springs assist the opening of the hatch completely.

WARNING: When driving on ice it is recommended to keep the roof hatch open.

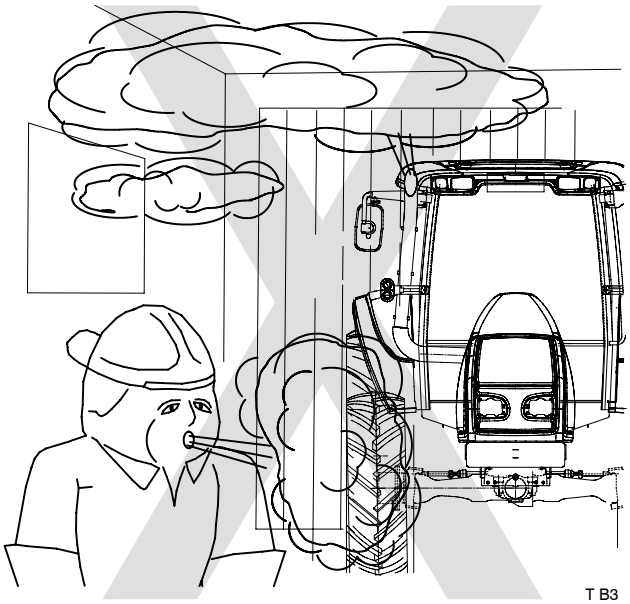
6 **Passengers** – No passenger may ride on the tractor unless it is provided with a special seat. Any passenger must not ride on the platform placed in the tractor. Other personal transport, for example, on front–mounted loaders, is not permissible.

7 **Caution** – Hold on to the steering wheel or safety handles in the cab if the tractor tips over. **Never try to jump out.**

8 **Maintenance** – The driver is responsible for following the maintenance instructions in this Manual and the safety regulations applicable for the tractor. No maintenance work is to be carried out on the tractor or implement unless the engine is stopped and the implement lowered.

9 **Lending** – Never lend the tractor to a person who is not used to driving it. You may be held responsible for any resulting accidents.

10 **Lights** – Always make sure that the lights and reflectors are clean and in working order. Do not forget that the headlights must be correctly adjusted.



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11 **Carbon monoxide** – Never start the engine, or run it indoors while the doors are closed as this may lead to poisoning by carbon monoxide.

12 **Downhill** – Never drive downhill with the gear lever in neutral or the clutch pedal pressed down. Check the brakes often. The brake pedals should be locked together when driving on the road. Always change down to a lower gear before driving down a steep incline. When driving downhill do not brake continuously – **danger of overheating the brakes!** Do not let the engine go into overdrive, it may damage.

13 **Running speed** – Adjust the speed to suit the driving surface, visibility and load. Avoid any sudden increase or reduction (braking) in the running speed as well as tight turns at high speed. If care is not taken the tractor may tip over or the load may be displaced.
IMPORTANT: The maximum speed of the tractor must not be altered.
Maximum operating forward speed is 40 Km/h, for safety the maximum operating speed in reverse is 20 Km/h.

14 **Power take – off driven attachments** – When running with power take – off driven attachments or machines it is very important that the prescribed safety devices are used and that they are in good condition. Serious accidents have occurred due to failure to use prescribed safety devices. Follow the directions given by the implement or machine manufacturer.

15 **Check links** – When transporting implements on the three – point linkage, the check links must be locked with the locking pins.

16 **Emergency exits** – The cab is provided with six emergency exits. These are the doors, side windows, rear window and roof.

17 **Stairs –** Keep the stairs clean. Build up of dirt can cause slippery conditions and can cause injury.

18 **Trailer load** – On tractors with trailers the load must be properly secured. The load must not obstruct the driver's vision or cover lights and reflectors. Loads wich project more than 1 m (39 in) behind the vehicle train must be suitably marked. During day-time this is done with a flag and during darkness with a red light and reflector arrangement.

19 **Trailer** – A trailer should only be coupled to the drawbar. A loaded drawbar must always be lowered with the three – point linkage. Check that trailer brakes are operating property and observe any special instructions issued by the trailer manufacturer.

CAUTION: When the tractor is towing a trailer the brake pedals must be locked together. The brakes are not to be used individually for steering.

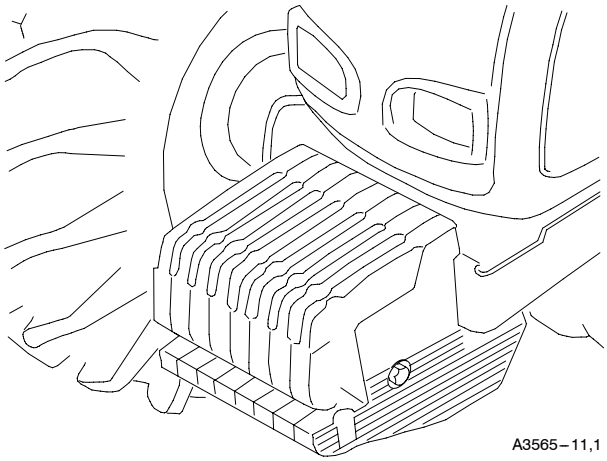
CAUTION: When using a trailer make sure that the hitch latch is locked.

WARNING: When using the trailer always use the brakes, if the law requires. The trailer brakes are recommended to use in 50 km/h models also in those countries, where it is not required by the law.

20 **Front – end loader** – When working with a front loader be sure that no one is in the working area. There is a danger that the tractor may tip over when the loader is lifted. The driver should put the front – end loader in the down position before leaving the tractor. Any special instructions issued by the loader manufacturer should also be observed.

21 **Running** – Before driving, always check that the tractor is in a safe condition for driving on the road. Rear view mirrors should be adjusted for the correct viewing angle before setting off. When towing an implement whose centre of gravity is located at a significant distance behind the tractor, the driver should remember that there may be considerable sway during cornering.

22 **Differential lock** – The differential lock must only be used when driving on loose or slippery ground. Never turn on a firm surface with the differential lock engaged. The differential lock should be disengaged when cornering.



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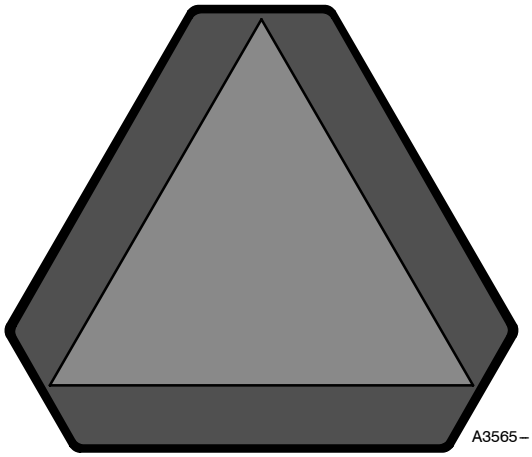
23 **Front axle loading** – When driving on the road at least 20 % of the gross weight of the tractor must be on the front axle. When lifting an implement the weight on the front end of the tractor is reduced, and the steering ability of the tractor is impaired or sometimes lost. Therefore sufficient ballast weights should be carried. Ballast weights should be mounted only at the points intended for this purpose.

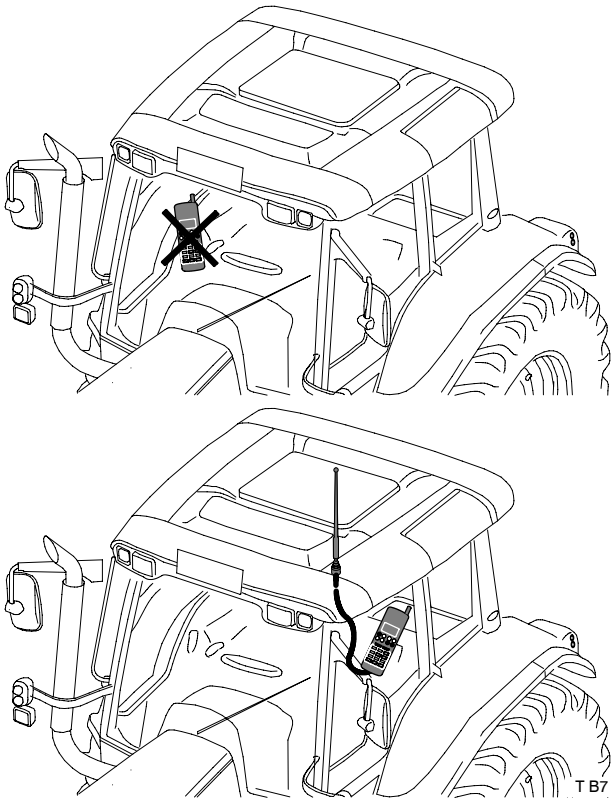
24 **Attaching implements** – Care must be taken when implements are being attached. There is a risk of an accident if the tractor or implement should move. It is only safe to enter the implement if the parking brake is applied or the wheels blocked in order to prevent the tractor from moving.

25 **Damage** – The driver is responsible for seeing to the repair of any wear which might endanger the safety of the tractor.

WARNING: If damage occurs to the cab, all parts affected should be replaced with new ones. No repair work (welding, drilling, cutting, or grinding) should be attempted.



26 **Triangle for slow vehicle (SMV – Slow Moving Vehicle)** – When driving on public roads always use the SMV emblem at the rear side of the tractor. Also use the rotating light where required by law.



27 **Mobile phones** – Mobile phones may cause failure for the electrical linkage function. A mobile phone can not be kept inside the cab, especially not above the right side panel.
When using a mobile phone in the tractor it is recommended that it is connected to the outside antenna.

28 **Hydraulic/fuel pressure** – Oil/fuel under high pressure easily penetrates through clothing and skin and can cause serious injury. Never attempt to locate a leak in the hydraulic system or attempt to close a leak using any part of your body.

29 **Implements maintenance** – Implements connected to the linkage or the auxiliary hydraulic system must be lowered to the ground during maintenance.

30 **Motor noise** –When you are operating the engine or working near it, use hearing protectors to avoid noise injuries.

31 **Naked flames and smoking** –Naked Flames, smoking and sparks are prohibited near the fuel system and batteries. (Especially, when charging batteries, **explosive gases present**).

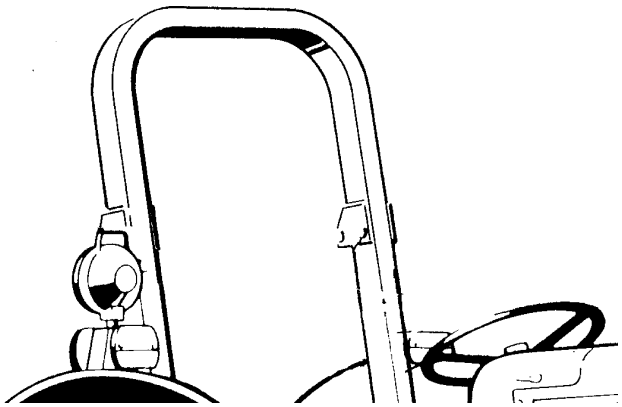
32 **By a fire** – At temperatures in excess of 300˚ C, e.g. if the engine is on fire, the viton seals of the engine (e.g the undermost 0–ring of the oil pressure regulating value) produce very highly corrosive hydrofluoric acid. Do not touch with your bare hands, viton seals which have been subjected to abnormally high temperatures. Always use neoprene rubber or heavy duty gloves and safety glasses when decontaminating. Wash seals and the contaminated area with 10 % calcium hydroxide or other alkali solution. Put all the removed material in sealed plastic bags and deliver them to the point stated by the Authorities concerned.

WARNING: Never destroy viton – seals by burning!

33 **Engine stop and restart** – If the engine has stalled eg. due too heavy loading, turn the ignition switch to the STOP position. Restart the engine according to the starting instructions. Keep an eye on the indicator lights on the instrument panel.

34 **Quick couplings for lower links –** Clean, if necessary the quick couplings and ball joints for the lower links before attaching the implement. **DANGER OF THE IMPLEMENT RELEASING!**

B 1.1. Roll Over Protective Structures



A B1

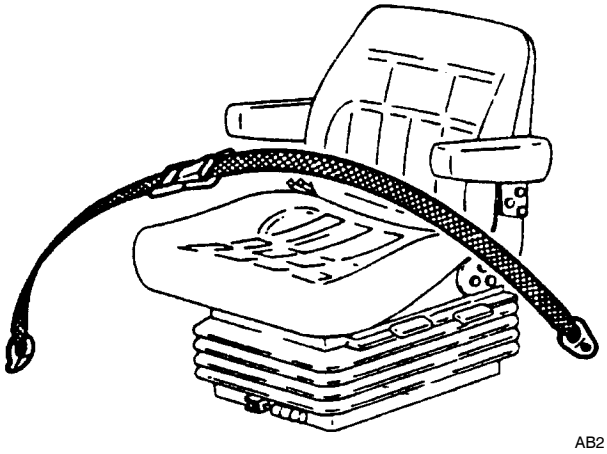
Fig. 5

A Roll Over Protective Structure (ROPS) and seat belt (extra equipment) is fitted as standard equipment to the footstep tractor at the time of factory assembly. If the ROPS was removed by the original purchaser or has been removed, it is recommended that you equip your tractor with a Roll Over Protective Structure and a seat belt. ROPS are effective in reducing injuries during overturn accidents. Overturning a tractor without ROPS can result in serious injury or death (Fig. 5).

If a fold down ROPS is installed DO NOT wear seat belt when the ROPS is in the folded down position.

B 1.1.1. Operation

– Before using the tractor ensure that the ROPS frame is not damaged, that it is securely fastened to the tractor and if a hinged section is fitted that it is in the raised position and secured.
– If the ROPS has been removed from the tractor, or folded down for a specific operation, it must be refitted or erected immediately afterwards using the proper hardware and applying the recommended torque values.
– DO NOT attach chains, ropes, or cables to the ROPS for pulling purposes; this will cause the tractor to tip backwards. Always pull from the tractor drawbar.
– Always wear your seat belt – adjusted snugly except when operating with a folded down ROPS.



AB2

Fig. 6

– Check the seat belt for damage. A damaged seat belt must be replaced (Fig. 6).

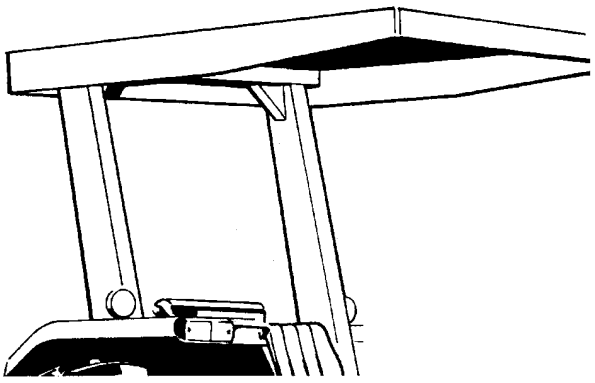
B 1.1.2. Damage to the ROPS

If the tractor has rolled over or the ROPS has been damaged (such as striking an overhead object during transport), the ROPS must be replaced to provide the original degree of protection.

After an accident, check for damage to the ROPS, operator's seat, seat belt and seat belt mountings. Before you operate the tractor, replace all damaged parts.

DO NOT WELD, DRILL, BEND OR STRAIGHTEN THE ROPS . To do so reduces the protection it offers.

B 1.1.3. Sun protection roof



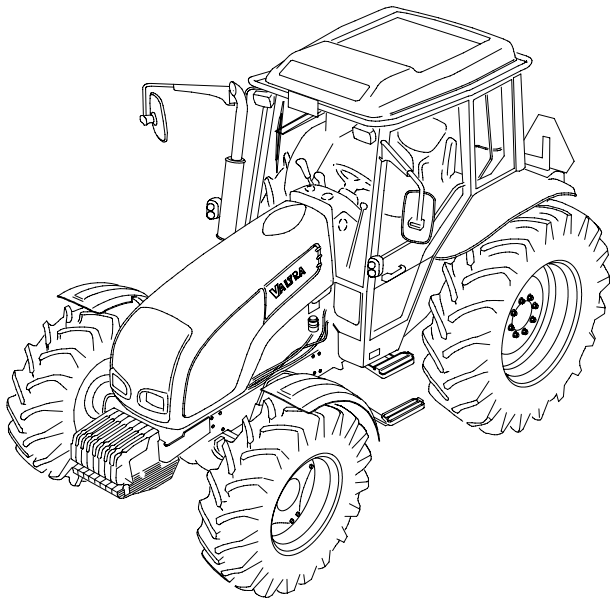
A B3

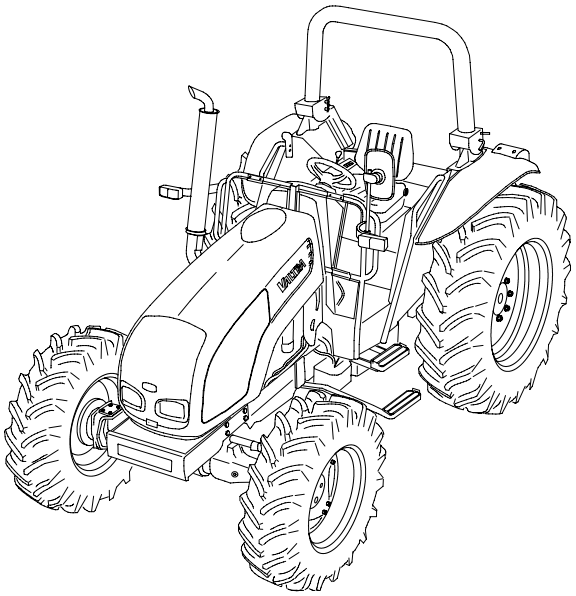
Fig. 7

– ROPS, FOPS (Falling Object Protective Structure), protective enclosure or protective screens (Fig. 7). Remember FOPS are protection from light falling objects and are not intended as protection from large falling objects such as large round bales or fence rails.
– SMV (slow moving vehicle) emblem, additional safety guards, lights or decals and a back up alarm.

C. General description

C 1. Illustrations Valtra A75n–A95n, A75L–A95L



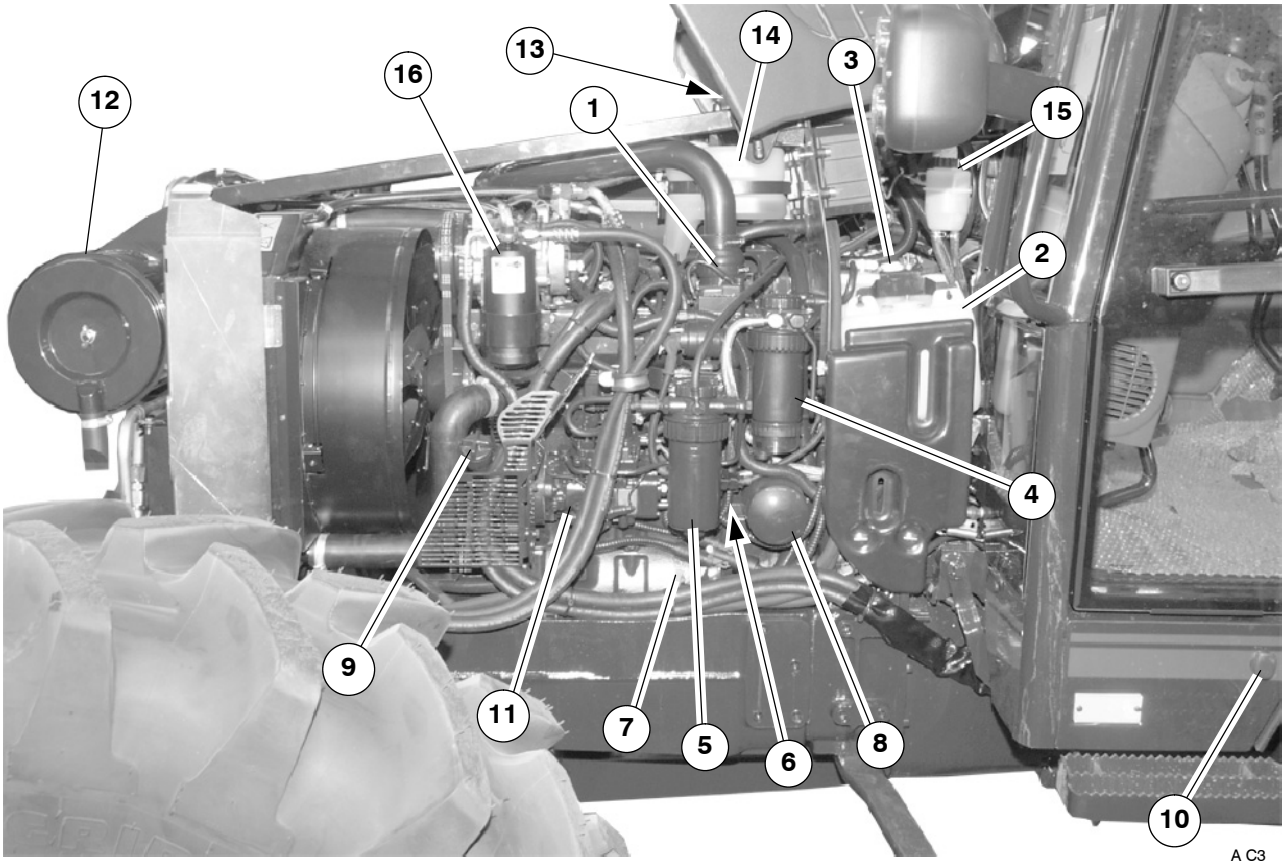


A C9

The exterior features of the new A–Series are remodelled similar to the other model series. The lift up engine cover makes serving easier.

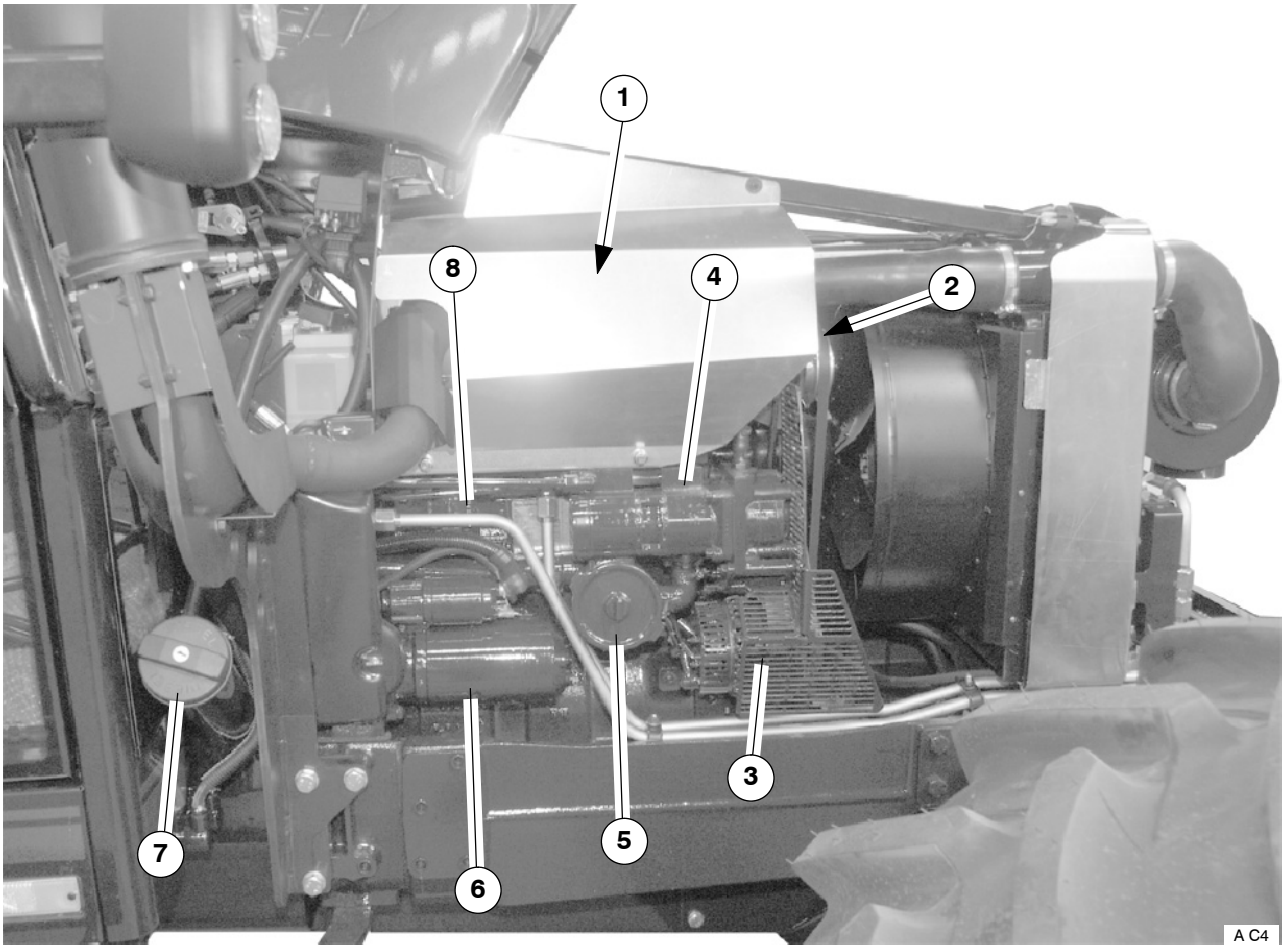
The models dealt with here belong to the Valtra's small category tractor series.
The tractors have 4–stroke direct injection diesel engines:
Three–cylinder engine, turbocharged;
–A75n, A75L
Four–cylinder engine, turbocharged;
–A85n, A95n
Three–cylinder engine, turbocharged and intercoolered;
A85L, A95L

The tractor is fitted with a double clutch which acts against the flywheel, fully synchronized gearbox, an shuttle unit, differential lock, hydrostatic steering, working hydraulics (alternatively electrohydraulically controlled hydraulic lift, not in open cab models) and power take–off. On these models an engine heater is included as standard (not in open cab models). The tractor is obtainable with powered front axle and as alternative equipment a forestry cab (not in open cab models).



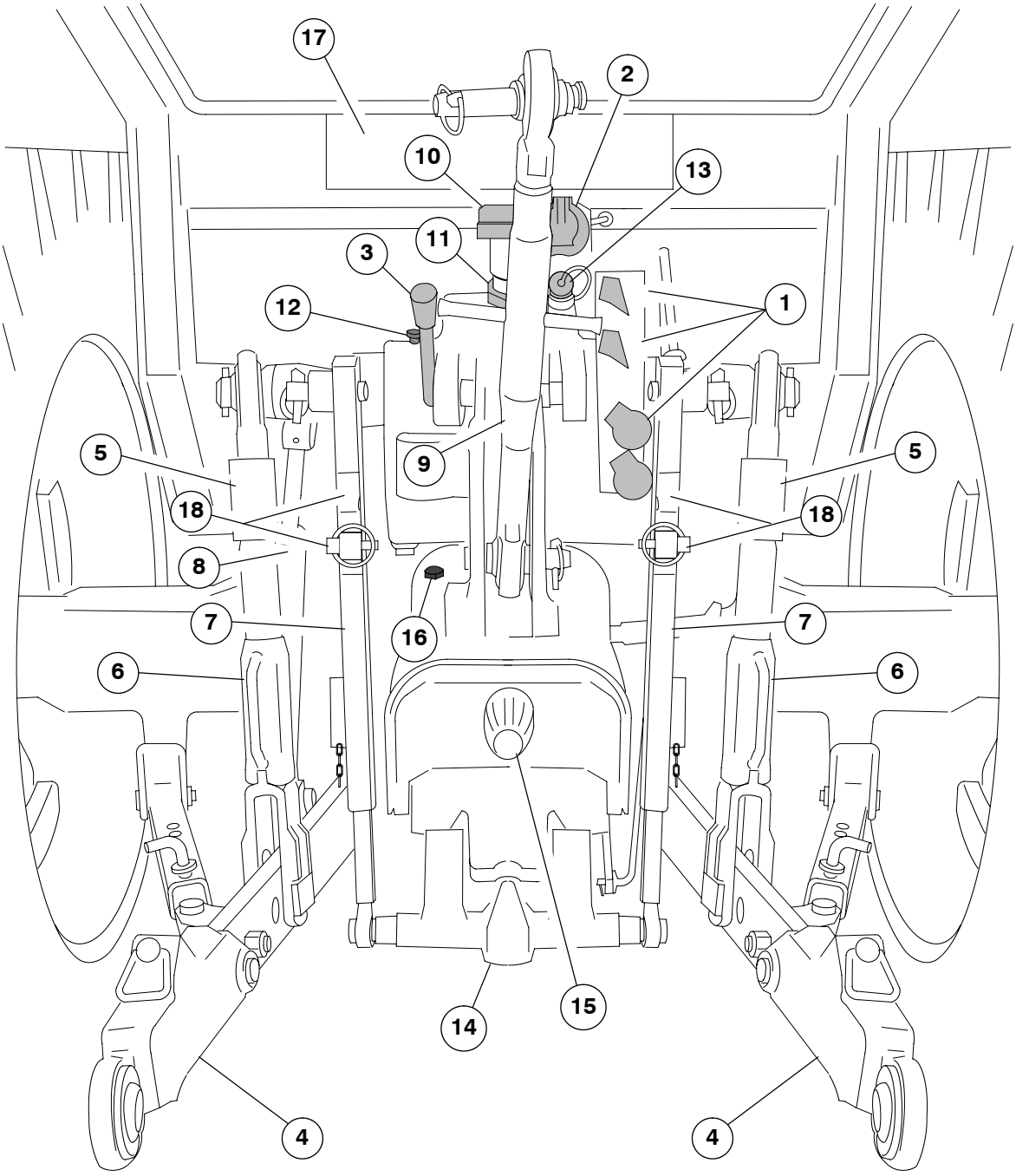
Left side of tractor:

1. Preheating of engine induction air, electric
2. Windscreen washer container
3. Battery
4. Prefilter, fuel system, water trap in lower part
5. Fuel filter
6. Cylinder block coolant drain plug
7. Dipstick, engine oil
8. Engine oil filter
9. Filler cap for engine oil
10. Engine heater plug
11. Fuel injection pump
12. Engine air intake prefilter system
    A75n, A75L–A95L cyclone cleaner (as in picture)
    A85n, A95n ejector
13. Heating system air filter
14. Expansion tank
15. Brake fluid tank
16. Air conditioning receiver, extra equipment



Right side of tractor:

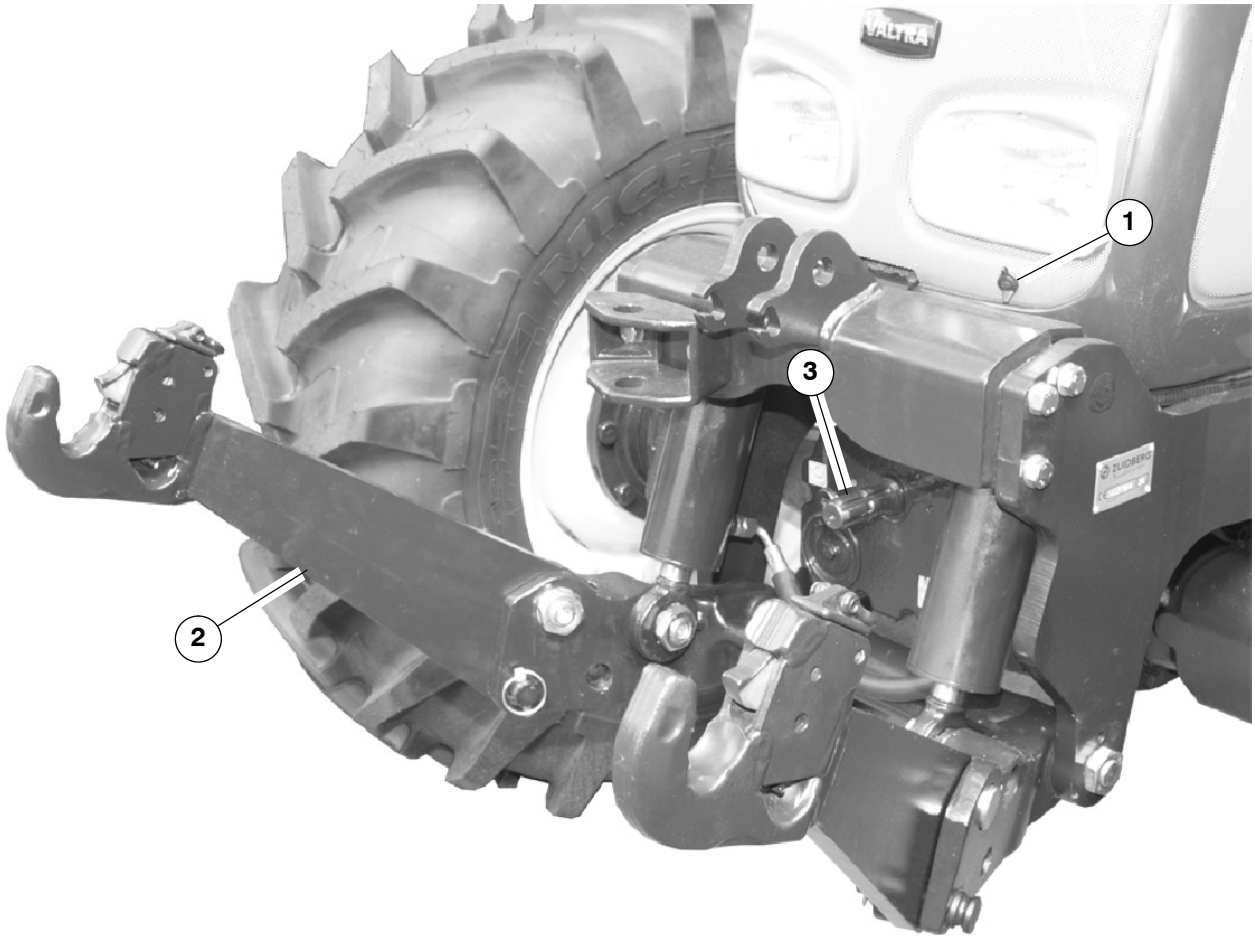
1. Turbocharger, behind the thermal protection
2. Thermostat housing
3. Alternator
4. Hydraulic pump
5. Suction strainer, hydraulic system
6. Starter motor
7. Fuel filling opening
8. Hand priming pump, fuel system



69–5,3

Rear view of tractor:

1. Quick–release couplings, auxiliary hydraulics
2. Trailer socket
3. Detent for disengaging draft control (not on electro hydraulically controlled hydraulic lift)
4. Lowering link
5. Lifting link
6. Levelling gear
7. Lifting link, trailer hitch (extra equipment, with the hydraulic hitch)
8. Extra lifting cylinder
9. Top link
10. Incorporating breather, hydraulic system
11. Oil filling, hydraulic system
12. Dipstick, hydraulic system
13. Auxiliary hydraulic system return coupling
14. Trailer hitch (extra equipment, several different alternatives, for more detailed see beginning of page 126)
15. Power take–off shaft (safety cap)
16. Transmission oil filling cap and dipstick
17. Inlet cover, remote control cables
18. Ring pins bracket



A C6

Front view of tractor:

Not in open cab models.

1 DIN–socket for current, max 8A (current on, when the parking lights are on)
2 Front linkage (extra equipment)
3 Front power take–off (extra equipment)

C 2. Service

In order to function satisfactorily the tractor must be properly maintained.
The necessary daily lubrication and routine checks, can, of course, be carried out by the driver.

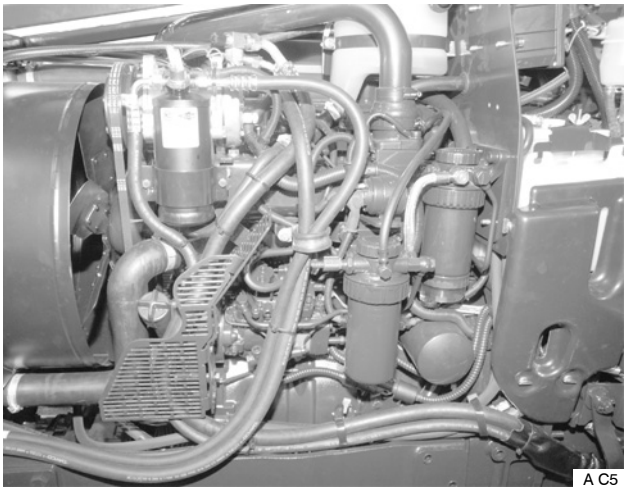
Where adjustments and repairs are necessary which require the attention of a qualified mechanic and the use of special tools, it is advisable to rely on a workshop. In this case we advice you to consult your local dealer as to how your tractor should be looked after as he is in a position to give you the best possible service. Through service bulletins and special training courses he is kept constantly informed of the factory's recommendations regarding care of the tractor.

C 2.1. Cost–free service

Before leaving the factory the tractor was thoroughly tested and adjusted to ensure it is in first-class condition when delivered to you.

However, it is important that the tractor is given further checks during the first period of operation. Bolts must be checked for tightness, various settings inspected and other minor adjustment made. Your dealer therefore gives one cost–free service inspection (excluding oil and filter costs) after 100 hours running.

C 3. Engine


A C5

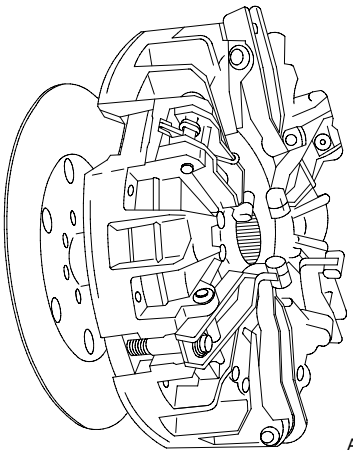
The tractors have 4–stroke direct injection diesel engines:
Three–cylinder engine, turbocharged;
–A75n, A75L
Four–cylinder engine, turbocharged;
–A85n, A95n
Three–cylinder engine, turbocharged and intercoolered;
A85L, A95L

The principle of the turbocharged engine is that exhaust gases from the engine cylinders drive the turbo unit which forces air into the cylinders. This means that a higher power output can be obtained with economical fuel consumption.

The engine induction air passes through the air filter and a safety filter inside the air filter. The air intake system has an effective ejector pre–separator system (4–cylinder models), most of the impurities are removed before they reach the filter by the exhaust fume flow. The safety filter prevents the engine from being damaged if the main filter fails.
These new 20–series engines have lower fuel consumption and cleaner exhaust gases.

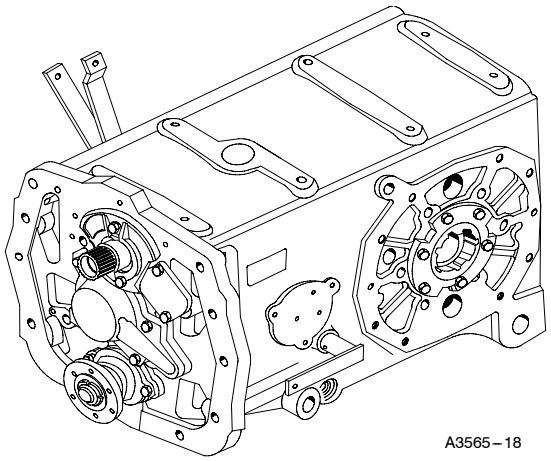
C 4. Power transmission

C 4.1. Clutch


A3565–17

The clutch is of the twin type and is attached to the engine flywheel. There are separate discs for the propulsion clutch and power take–off. Both clutches are operated mechanically independently of each other, the propulsion clutch being controlled by means of a pedal and the power take–off clutch with a lever.The clutch plates are both axel– and rad springed.
As extra equipment the push buttons for HiShift are available (not in open cab models), making driving easier so there is no need to use the foot clutch pedal.
Traditional use of clutch pedal is, however, always possible.

C 4.2. **Gearbox**



The speed gearbox has four synchronized gears which are controlled with a speed gear lever.
In front of the gearbox there is fitted a shuttle unit.

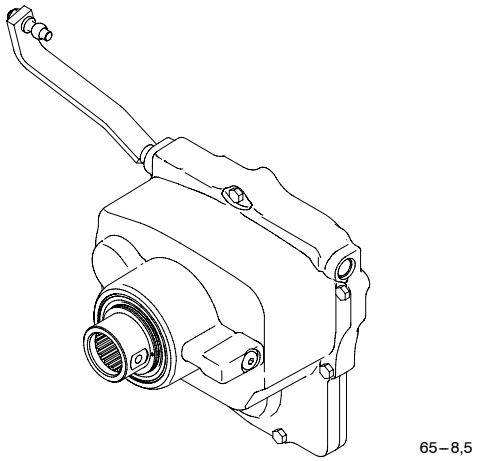
On models with the shuttle unit the gearbox has three range gears; LL=creeper range, M=Medium range and H= High range. M and H ranges are synchronized. All these three range gears are controlled with one lever. In the gearbox there are 12 forward speeds and 12 reverse speeds.

The gearbox has a common housing with the differential. Helical gears of the gearbox give a low noise level and vibrationless power transmission. The gearbox also has pressurized lubrication provided with an oil filter.

C 4.3. **Rear axle**

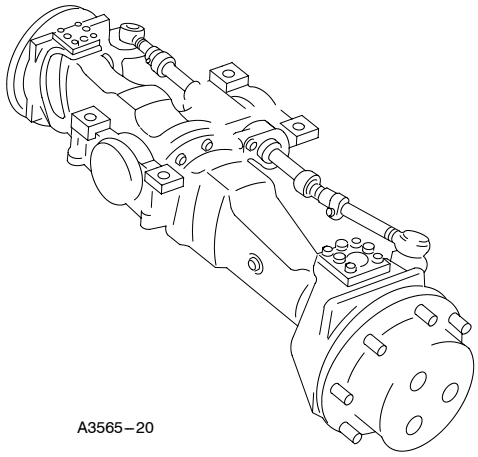
The rear axle is fitted directly to the gearbox.
The differential lock is of the pawl type which is engaged and disengaged electro–hydraulically. An indicator lamp on the instrument panel lights up when the differential lock is engaged.
Final drives are of the planetary gear type. From the planetary gears power is transmitted to the rear wheels.

C 4.4. **Power shuttle**



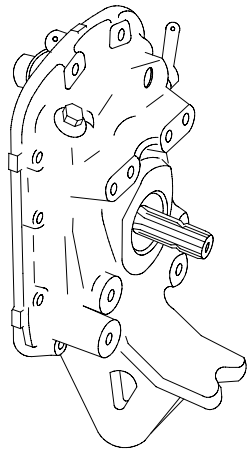
The shuttle unit is synchronized and has a pressure lubrication system. The forward–reverse shutle is controlled with the lever nearest to the driver. For this reason forward/reverse changing can be made quickly and very easily e.g when loading work is carried out.

C 4.5. **Powered front axle**



The powered front axle is driven from the output shaft of the gearbox for front wheel drive through a propeller shaft.
The differential of the front axle has an automatic differential brake. The differential brake engages automatically when wheel–spin occurs.
Front wheel drive can be engaged and disengaged electro–hydraulically. When 4WD is engaged the springs force the discs together and four–wheel drive engages. Consequently the 4WD is always engaged when the engine is stopped (multi–disc clutch not pressurized).
In addition when braking with both brake pedals or when engaging parking brake, the front–wheel drive always engages in order to provide the braking function for the front wheels.
Front wheel drive can be used in all gears, but when running on the road it should remain disengaged.

C 4.6. Power take–off



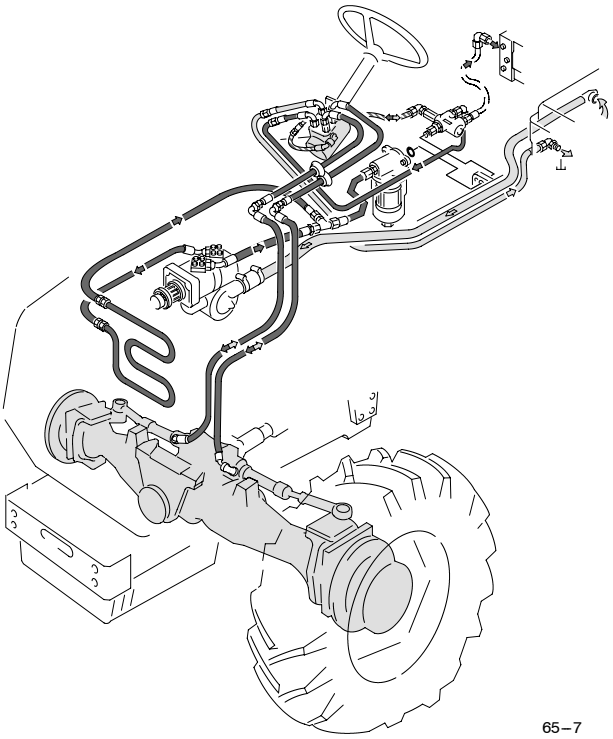
A3565–21

The power take–off works fully independently of the gearbox. It has its own clutch disc in the twin clutch which is attached to the flywheel. Engagement and disengagement of the power take–off is via the PTO clutch control lever of the clutch disc. Power is transmitted from the flywheel to the power take–off through a power take–off shaft which runs through the gearbox.
With the PTO selector control lever, located on the right side of the driving seat, you can select either 540 RPM or 1000 RPM, alternative equipment 540E (750 RPM) PTO.
Front PTO (extra equipment) shaft's nominal speed is 1000 RPM (at an engine rotating speed 2120 PRM).

C 5. Brake system

The oil bath multi–disc brakes are located between the differential and final drive gears in the final drive housing. The brakes operate hydraulically from the brake pedals. When both brake pedals are depressed the front wheel drive is engaged automatically (4WD indicator lamp lights on instrument panel) in order to provide braking function at the front wheels. The pedals can be connected together and used as running brakes or separated and used individually as steering brakes.
The parking brake is mechanically operated and operates on the main brakes and engages the 4WD electrohydraulically (4 WD models, parking brake and 4WD indicator lamps light on instrument panel).
The brakes can be adjusted by means of adjusting nuts which are fitted on the rear axle.
A trailer brake valve and the air pressure brakes are available as extra equipment (not in open cab models).

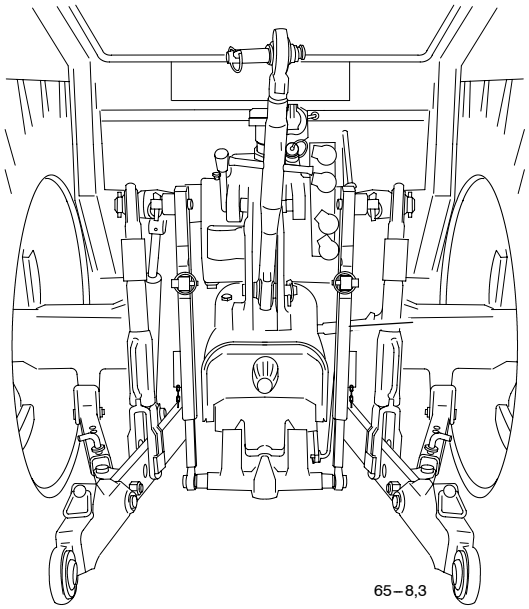
C 6. Steering system



65–7

The tractor has a hydrostatic steering system meaning that the steering movement from steering wheel to the front axle is transmitted by means of oil under pressure. This makes the hydrostatic steering particularly easy to use. If the oil pressure in the steering system should collapse for any reason, steering is still possible by hand. The steering valve then acts as a pump, although steering will be considerably heavier.
The tractor hydraulic system has a priority valve, which ensures that there is always sufficient oil for the steering system.

C 7. Hydraulic system



On the hydraulic system there are two oil pumps, whose total capacity together is 52 l/min at an engine speed of 2270 r/min (max 55 l/min).

The hydraulic circuit controls:

– steering system (prioritised)
– linkage hydraulics
– auxiliary hydraulics
– trailer brake valve (extra equipment)
– four wheel drive, through the pressure relief valve
– differential lock, through the pressure relief valve

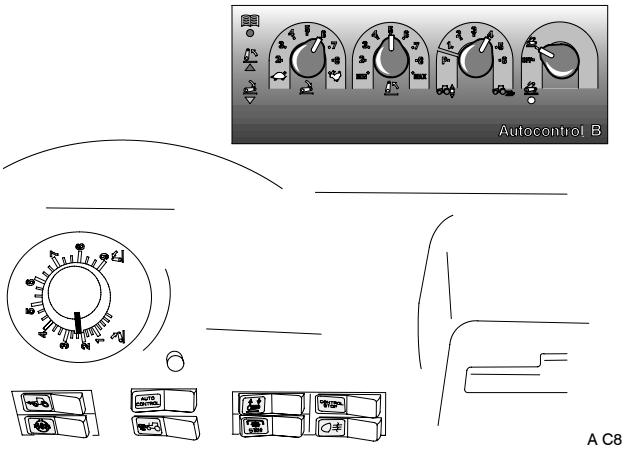
C 7.1. Hydraulic lifts

C 7.1.1. Hydraulic three–point linkage unit

The hydraulic lift has position control, lowering speed control and draft control. Impulses for draft control are obtained through the top link. The sensitivity can be regulated by altering the fastening point of the top link.

C 7.1.2. Electro hydraulic three–point linkage

Not in open cab models.



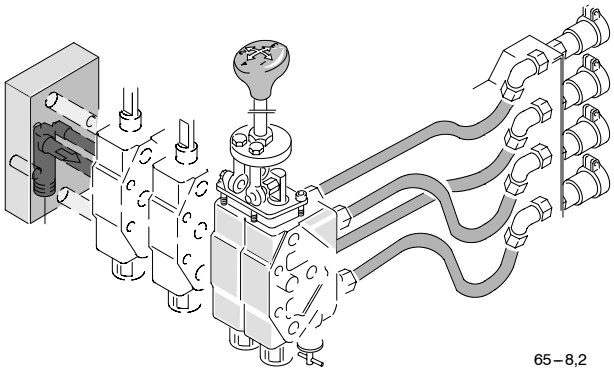
When an electro–hydraulic **Autocontrol B (ACB)** is fitted, the control levers are replaced with knobs and switches. Pre–programmed/programed functions:

– Draft control/position control combining ratio plus sensitivity on the regulator, the sensitivity adjustment is automatic.
– Lowering speed (independent of load)
– Transport height
– Drive balance control system

C 7.1.3. Front linkage (optional equipment)

See more information in section K of the extra equipments on page 132.

C 7.2. Valves for auxiliary hydraulics



The tractor has two valves for auxiliary hydraulics as standard. One valve can be changed to single – or double acting. Two additional valves can be fitted as an optional accessory, also one valve can be fitted for the trailer braking system. Single–lever control is used for these standard valves.
Four quick–action couplings are mounted as standard at the rear of the tractor. Provision has also been made for the mounting of four extra couplings and brake valve coupling.